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ECR overcomes most of these constraints and barriers by making it possible for medium sized groups of students to attend lectures, ask questions and get answers in real-time, and participate as a member of a learning group in much the same way he or she would in the traditional classroom. ECR accomplishes this by satisfying a set of metaphors and assumptions about teaching and learning in the classroom. These assumptions are:

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DESIGN ASPECTS:

The design problems that had to be solved grew from the goal that was set for ECR--to emulate a classroom setting online. In a real classroom, the teacher usually uses a chalkboard and/or overhead projector to introduce lecture material to the students. The students may ask questions during the lecture. There is a one-to-many relationship between teacher and students with a well known protocol available for the exchange of information. To simulate a real classroom, it is necessary to duplicate most of these protocol features.

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ALTERNATE USES AND EVALUATION:

ECR has been helpful in academic situations other than the classroom emulation. These include evaluation of instruction and programs, Delphi techniques for curriculum and program planning, and several group participation methodologies such as the online charrette, brainwriting, nominal group technique, cross impact analysis, and the futurewheel. ECR has been used for program review and needs surveys. Students are asked regularly to rate instruction as well as to give feedback about future uses of the utility. One survey resulted in the students stating that they would like to see more lectures presented on computer concepts that were not presented in the regular curriculum. ECR has a Delphi mode, where students can provide feedback on survey items and at the same time view the responses of their colleagues.
The Electronic Classroom has proven its effectiveness in delivering a classroom type of instruction to students that are located in different areas of the country. Through use of the Unix operating system, the ECR provides an online environment where up to 24 students can participate in lectures, demonstrations, and other group processes for evaluation and planning of instruction. Preliminary results of evaluations indicate that student response to ECR is positive. Their comments lend support to the assumptions upon which the system is based: that real-time group interaction provides an essential dimension to learning.

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CONCLUSION:

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